

Science-Based Prevention Strategies

Northeast Center for the Application of Prevention Technologies

The Northeast CAPT has compiled the following information on science-based strategies, which is drawn in large part from the [Center for Substance Abuse Preventions \(CSAP's\) Science-Based Practices in Substance Abuse Prevention: A Guide](#).

Health and Human Development Programs at EDC



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As prevention practitioners deciding to implement prevention programs in your schools, communities, clinics, agencies, or other settings, it is critical to identify and adapt science-based strategies that are likely to be most effective in meeting the needs of the people with whom you work. When you base your program on a set of strategies proven effective through rigorous evaluation, you increase the likelihood that you will reduce substance abuse. Yet, how do you determine which strategies work?

The program evaluation literature is dense and there are hundreds of programs to review. The review process is complicated by the fact that some rigorously evaluated programs are shown not to work; many programs use weak evaluation designs, making it impossible to draw conclusions about their effectiveness; and many more programs have not been evaluated. The prevention field is working currently to identify programs that meet various sets of criteria that define what is science-based.

Replicating a “packaged” science-based program is one approach to meeting prevention needs. While replication has many advantages, there are some potential pitfalls you should consider. These include:

- The programs available may have been designed, implemented and evaluated with audiences and in settings different than your own.
- The programs available may not meet the needs you have identified as priorities for the population you serve.
- The programs, if comprised of multiple strategies, may include some strategies that work better than others at achieving the desired outcomes.
- It may not be feasible to implement the program as intended due to constraints related to resources and setting.

If you cannot find a packaged, science-based program that matches your specific audience issues, then consider:

- adapting one of your funder-identified programs; or
- developing a new program

Adapting or developing programs that use various strategies or components as the building blocks of the program design allows you to create a program that better meets the needs and draws upon the assets of the people you serve. When you base your program on a set of strategies proven effective

through rigorous evaluation, you increase the likelihood that your program will be effective in reducing substance abuse. However there are no guarantees; and, you assume greater risk when designing your own program than you would replicating another. So, how do you increase the likelihood that your program will be a success?

Fortunately, researchers at the national level have made great strides in distilling effective strategies and principles from the multiple programs that focus on preventing and reducing substance abuse and related risky behaviors. It is important that you view these strategies, like the work from which they are derived, as a work-in-progress; that is, the strategies we describe below represent only what is known currently about what works. For every strategy evaluated, there are others that remain untested.

To increase the probability that your adapted or new program will be successful, the Northeast CAPT has compiled the following information on science-based strategies drawn in large part from the [Center for Substance Abuse Prevention's \(CSAP's\) Science-Based Practices in Substance Abuse Prevention: A Guide](#). This document describes science-based strategies in seven major areas:

- Policy
- Enforcement
- Communications
- Education
- Collaboration
- Alternatives
- Early intervention

These strategies for preventing substance abuse are, in many cases, parallel with those for violence prevention. While there is no guarantee that a prevention activity based in these principles will succeed in delivering positive outcomes, these key elements can provide a solid foundation for a science-based approach.

GENERAL GUIDELINES FOR PREVENTION PROGRAMMING

Research suggests some general guidelines that you can follow before you begin to think about which specific strategies to adopt. These include:

- Developing an understanding of the underlying causes of or factors that contribute to substance abuse and the strategies that can affect those factors.
- Identifying carefully those risk factors most closely related to the substance abuse problems you have identified.
- Selecting prevention strategies that sound research has shown are effective.
- Conducting continuous, rigorous evaluation to determine whether you have met your goals and objectives.

In addition, keep the following points in mind when developing your program:

- Drawing upon multiple strategies to meet *one* common goal increases the likelihood of program effectiveness. (For example, community X's goal is to curb underage drinking. Therefore, all of the strategies they decide to employ should ultimately point to achieving this goal. Some of the strategies they will use to reduce access to alcohol include sting operations, merchant education programs, and the development of local ordinances around the location of alcohol vendors aim. Other strategies target the individual behavior of youth through peer education programs and life skills training.)
- The use of many strategies or principles does not necessarily guarantee greater program effectiveness. It is most important that strategies are coordinated to work towards the achievement of one goal.
- Applying science-based strategies to a poorly designed and implemented program may improve outcomes, but it will not guarantee an effective program.
- Strategies should complement one another to avoid any counteracting effects (For example, adopting a clear school policy concerning substance use with clear sanctions can help to reinforce educational programs in the classroom.)
- Some strategies are more potent than others in preventing substance abuse and violence.
- Innovative prevention strategies that may have little or no evaluation data can be used, as long as you include a rationale for their inclusion and a plan for their evaluation.

POLICY STRATEGIES

Perhaps the most potent strategies for preventing, reducing, or eliminating substance abuse (and violence) are the creation, promotion and enforcement of policies and norms designed to change the environments in which people live and work. Policies include laws, rules, and regulations that serve to control availability of alcohol, tobacco, and other drugs through pricing, deterrence for using or incentives for not using, restrictions on availability, and restrictions on use. Policies also codify norms about substance use and specify sanctions for violations. Governments (municipal, state, and federal levels), public agencies (e.g., police departments, school systems), and private organizations (e.g., HMOs, hospitality establishments, convenience stores) all institute policies.

Policy strategies are more likely to be effective if they:

- **Are paired with collaboration and communications strategies.** Regulations must be in step with community norms, beliefs about the harmfulness of a particular substance or the “rightness” or “wrongness” of a particular action. For a community to move on a particular policy or regulation, it must understand the problem and be ready to make changes based on that understanding.
- **Increase the price of alcohol or tobacco.** Increases in price through excise taxes have been associated with effectively reducing consumption—the number of people smoking cigarettes and drinking alcohol and the amount of alcohol and tobacco consumed. This strategy can also reduce various alcohol-related problems, including the incidence of motor vehicle fatalities, driving while intoxicated, rape, robbery, and suicide and cancer death rates.
- **Set the legal blood alcohol content (BAC) limit to 0.08.** Research shows that BACs at this level or lower are associated with reductions in levels of impaired driving and alcohol-related crashes. Revoking drivers’ licenses in the event of an illegal BAC or if the driver refuses to be tested has been shown to reduce the number of fatal crashes and repeat offenses among DUI offenders.
- **Set the legal blood alcohol content (BAC) limit to 0.00 or 0.02 for young people under the age of**

21. When paired with a variety of driving restrictions (e.g., graduated driver’s licensing) that are gradually lifted as the driver gains experience, this strategy has been shown to significantly reduce traffic deaths among young people.

- **Provide deterrents to using alcohol or firearms or incentives for not using.** Suspending the drivers license of a person under 21 years of age following a conviction for any alcohol or drug violation is an effective way of increasing compliance with minimum purchase age laws among the young.
- **Limit the location and density of alcohol retail outlets.** This strategy may help contribute to reductions in alcohol consumption, traffic crashes, and certain other alcohol-related problems, including assaults. Using this strategy can contribute to a reduction in the availability of substances to youth.
- **Restrict the use of tobacco in public places and private workplaces.** Restricting use has been shown to be effective in reducing cigarette sales and tobacco use, lowering average daily cigarette consumption among adults and youth.

ENFORCEMENT STRATEGIES

Consistent enforcement and reinforcement is needed to enhance the effectiveness of existing as well as new policies regarding substance abuse. Police officers, in particular, are important to enforcement, and as such, should be represented on your community advisory board, health task force, or school and community coalition. Police, however, are not the only key community members critical to the enforcement of policies and norms in a community. Young people, parents, and other community members play an important role in combination with police and others in the law enforcement and judicial fields.

Enforcement strategies are more likely to be effective if they:

- **Are paired with collaboration and communications strategies.** Community collaboration and media efforts are effective tools for increasing awareness of penalties associated with violating laws regarding alcohol and tobacco sales to minors. Media efforts are also helpful in changing or reinforcing community norms that disapprove of sales to and use by minors.

- **Ensure that retailers comply with minimum purchase age laws for tobacco and alcohol.** Undercover buying operations (a.k.a. “sting” or “decoy” operations) to enforce minimum purchase age laws against selling alcohol and tobacco to minors increases the likelihood that retailers will comply with such laws. Undercover community buying operations that provide positive and negative feedback to merchants are also effective in increasing retailer compliance with underage drinking laws.
- **Limit driving privileges for those who violate minimum purchase age laws.** Suspending the driver's license of a person under 21 years of age following a conviction for any alcohol or drug violation is an effective way of increasing compliance with minimum purchase age laws among the young.
- **Limit driving privileges for those caught driving under the influence (DUI) of alcohol or drugs.** Revoking a person's driver's license in the event they drive with an illegal BAC or if the driver refuses to have his/her BAC level tested has been shown to reduce the number of fatal crashes and repeat offenses among DUI offenders.
- **Involve public enforcement of impaired driving laws.** Visible enforcement of these laws is important because it increases the public's perception that violators will be caught and punished for drunk driving. Sobriety checkpoints are one example of this kind of public enforcement of impaired driving laws.
- **Pair enforcement of laws against service to intoxicated patrons and sales to minors with server training.** This combination of strategies increases the effectiveness of server training programs by improving selling and serving practices to minors and intoxicated patrons.
- **Employ citizen surveillance and nuisance abatement programs.** These strategies have been effective in dislocating drug dealers and reducing the number and density of retail drug markets.

EDUCATION STRATEGIES

Instructional approaches that combine social and thinking skills are one of the most effective ways of enhancing individual abilities, attitudes, and behaviors inconsistent with substance abuse and other kinds of delinquent behavior. These methods tend to be far more effective at changing behavior than educational programs that focus on imparting knowledge about substances and the adverse effects of substance abuse and on bolstering self esteem. Education programs are typically found in schools and in some after-school programs. While instructional programs have been important and

necessary, and even effective at imparting knowledge, developing skills, and changing some behaviors, alone *most* are insufficient to produce far reaching and long-lasting change.

Education strategies are more likely to be effective if they:

- **Combine broader-based life skills instruction with resistance skills training.** Certain sets of skills are particularly effective in preventing the onset of and reducing the continued use of alcohol, tobacco, and other drugs. These skills include empathy, social problem-solving or impulse control, communication, stress management or coping, media resistance, assertiveness, and belief development or normative education.
- **Include an adequate dosage.** At a minimum, skills-based instruction programs should include 10 to 15 sessions per year and another 10 to 15 booster sessions offered one to several years after the original intervention. Longer, more comprehensive skills-based programs that cover longer periods produce broader and more enduring changes. Further, booster sessions help students maintain skills over a longer period.
- **Reach children from kindergarten through high school.** Substance abuse prevention instruction strategies are more likely to be effective when they start with young children in order to prevent the later use and abuse of substances. It is especially important to reach students in the middle school or junior high years. During this time of transition, many young people begin smoking cigarettes and drinking alcohol. It is therefore important to offer programs that contain multiple years of intervention (all through the middle school or junior high years).
- **Reach young people during non-school hours.** You may offer social and thinking skills-based programs in a number of environments, including after-school mentoring, individual therapy, and family management training. See also “Alternative Strategies” and “Early Intervention Strategies” below.
- **Use age-appropriate, interactive teaching methods.** Interactive approaches that engage students in learning are more effective than didactic approaches. Interactive approaches include modeling, role playing, discussion, group feedback, reinforcement, extended practice, cooperative learning, and student-centered learning techniques.

- **Foster prosocial attachment to the school and community.** Students lack of attachment to school may be related to unsatisfying academic experiences. Prevention interventions may address this issue by including components that offer academic skill-building for students.
- **Include components that are led by students.** Educational approaches that include peer-led components are more effective than programs that do not include these kinds of components. Peer educators usually require extensive prior instruction to prepare them to present before or engage their peers. These programs may offer one-to-one instruction or large group instruction.
- **Include an educational component for parents with drug information for them and their children.** Educational approaches that target parents and their children and school-based approaches that involve parents or complement student-focused curricula with parent-focused curricula can be effective in preventing adolescent substance abuse. See also “Early Intervention Strategies.”
- **Pair server training with enforcement of laws against service to intoxicated patrons and sales to minors.** This combination of strategies increases the effectiveness of training programs by improving selling and serving practices to minors and intoxicated patrons.

COMMUNICATIONS STRATEGIES

Communications strategies influence community norms as well as increase public awareness about specific issues and problems related to substance abuse, attract community support for other program efforts, reinforce other program components, and keep the public informed about program progress. Communications strategies include: public education; [social marketing campaigns](#) that apply marketing principles to the design and implementation of communication campaigns; media advocacy approaches that lobby various media to change the way they portray substance use issues to ultimately influence policy changes; and media literacy programs that educate people to be critical of what they see and read in the media.

Communications strategies are more likely to be effective if they:

- **Are combined with more intensive and interactive prevention approaches.** When coupled with more potent prevention approaches (e.g., education and skills building, policy, enforcement), the media is a useful tool for reaching many people in the community.
- **Present messages that appeal to the motives of young people for using substances or aggression or to perceptions of substance abuse.** Messages that appeal to or correct young peoples perceptions of risk are more likely to be effective at changing young peoples substance-related knowledge, behaviors, and attitudes than messages that do not. For example, counteradvertising campaigns that disseminate information about the hazards of a product or the industry that promotes it may help reduce cigarette sales and tobacco consumption. Messages that correct misconceptions about prevalence of use, “Most of your friends don’t smoke marijuana,” may reduce consumption, since students are more likely to engage in a particular behavior if they believe that more of their peers are doing it.
- **Place messages where young people are likely to see and hear them.** Pay for television and radio spots in choice airtimes, when youth are more likely to view or listen. Post placards regarding underage drinking and smoking in liquor stores or stores that sell cigarettes. Put posters in well-trafficked areas in and around schools.
- **Tailor message to the audience.** Ultimately, the messages you convey should be tailored to your audience. One way of determining what those messages should be is to conduct an assessment of attitudes and beliefs about substance abuse. For example, allow for the different viewing habits of younger and older adolescents, utilizing radio, television, and print media appropriately. The interests of youth also vary by gender, ethnicity, and geography. What might appeal to young people living in the city may not appeal to a young person living in a rural setting.
- **Avoid the use of authority figures and admonishments, as well as the demonstration of harmful substances.** Young people tune out when messages are overbearing or use scare tactics.

COLLABORATION STRATEGIES

While not directly affecting the use of tobacco, alcohol, and other drugs, collaborative efforts, community coalition building and interagency collaboration in particular, have been shown to be effective in raising awareness about the issues of substance abuse and violence and in coordinating prevention and treatment services.

Collaboration strategies are more likely to be effective if they:

- **Promote or involve communities that are mobilized or ready to engage in community change activities.** These communities have shown decreases in alcohol, tobacco, and other drug use and changes in perceived norms about substance use.
- **Use media and community education strategies.** These strategies increase public awareness, attract community support, reinforce school-based curriculum for students and parents, and keep the public informed of program progress.
- **Are part of a comprehensive effort.** Community collaboration is more effective if it is integrated into and offered in conjunction with other effective strategies. In particular, combine this approach with media and community education strategies, since these increase public awareness, attract community support, reinforce other program efforts, and keep the public informed of the program's progress.
- **Coordinate with other community efforts.** Don't duplicate efforts. Look at what people in different settings—community-based organizations, health and social service sectors, schools, and so on—are already doing to prevent substance abuse, and build on those efforts. Include program components that can be integrated or coordinated with other efforts to support your messages. For example, work together to secure funding for substance abuse prevention programs, increase access to and quality of existing prevention and treatment services, make environmental changes (e.g., close crack houses, remove billboards for tobacco and alcohol), or provide alternative activities for young people.
- **Reach different populations at risk.** Collaborative efforts are more likely to be effective if they meet the needs of all young people as well as those at high risk. Community efforts must include representatives from different segments of the population, including different religious, ethnic, and

socioeconomic groups, as well as people of all ages in order to be truly responsive.

- **Meet the needs of its members.** Most people want to get something specific out of their collaborative experience. Appeal to different motivations for joining. Community leaders and professionals, for example, are more likely to seek outcomes or accomplishments related to their organizational or political interests, while community or citizen activists want to spend their time in a useful way that will make their communities better places to live.
- **Recruit and involve members whose positions, expertise, or skills match the purpose and plan of the coalition.** For example, if direct community action is the focus of your work, then you should involve grassroots activists and community citizens.
- **Possess a shared vision of purpose and direction.** Community collaboration is more likely to succeed if everyone shares the same vision of what he or she would like to achieve. Getting people on the same page may require discussion about common goals, types of effective strategies, and the need for strategic planning.
- **Follow a structured organizational plan.** Planning is critical to school and community collaboration. Community coalitions tend to be more effective when they begin with a clear understanding of the substance-related problems they want to change. From that point, they can then progress from that assessment through the development of measurable goals and objectives, program design based on effective strategies, implementation, and evaluation and refinement of their efforts. Feedback to and from the members of the community coalition is essential at all stages.
- **Avoid elaborate organizational and committee structures.** Such structures can inhibit productivity and are at times counterproductive. Oftentimes complex structures can stall the motivation and productivity of a group.
- **Encourage a leadership of ideas.** Leadership is promoted when coalitions create opportunities for a variety of members to show leadership by demonstrating their ideas in a plan for action.
- **Have specific measurable objectives and activities.** These objectives and activities should be time-limited, feasible (given available resources and other constraints), and integrated so that they work together across program components and can be used to evaluate program progress and outcomes.

ALTERNATIVES STRATEGIES

Increasingly, schools and communities are working together to incorporate recreational, enrichment, and leisure activities into their approach to prevention. Drop-in recreation centers, after-school and weekend programs, dances, community service activities, tutoring, mentoring, and other events are offered in these programs as alternatives to dangerous activities such as substance abuse and violence. While many alternative approaches have not been evaluated with rigor, researchers have learned some valuable lessons about what elements increase their likelihood of success.

Alternatives strategies are more likely to be effective if they:

- **Are part of a comprehensive prevention plan that includes other strategies proven to be effective.** The general conclusion of researchers is that these kinds of activities alone are insufficient to affect substance abuse among youth. Enrichment and recreational activities must be paired with other strategies that have been proven effective, such as policies that reduce the availability of alcohol, tobacco, and other drugs, as well as weapons or social and personal skill-building instruction.
- **Are targeted to youth at high risk that may not have adequate adult supervision or access to a variety of activities.** Alternatives activities are more likely to be effective with youth at high risk for substance abuse who have few opportunities to develop the kinds of personal skills needed to avoid behavioral problems. Activities that have been successful in meeting the needs of young people at risk include the following:
 - * *community service* associated with an increased sense of well being and more positive attitudes toward people, the future, and the community
 - * *mentoring programs* related to the reduction in substance use and increases in positive attitudes toward others, the future, and the school
 - * *recreational and cultural activities* associated with decreasing substance use and delinquency by providing alternatives to substance use as well as monitoring and supervision of young people
- **Are targeted to the needs and assets of the individual.** If the activities you offer are not attractive to the young people with whom you work, then the young people will not participate. One way to ensure that activities interest and meet the needs

of young people is to involve them, as appropriate, in creating these activities or in selecting service opportunities.

- **Provide intensive approaches that include many hours of involvement with access to related services.** Across Ages, for example, which matches senior citizens as mentors to sixth-graders at high risk, found that the more highly involved the mentor, the greater the positive results. Across Ages also provided other services to youth, including skills-based instruction, family workshops on parenting skills, and other community service opportunities.

EARLY INTERVENTION STRATEGIES

Early intervention includes strategies such as screening, assessment, referral and treatment of youth at risk for substance use and related risk factors; home visitation; early education (e.g., Head Start); student assistance programs; employee assistance programs; and treatment and counseling services. Counseling interventions for youth at high risk, including student assistance programs, require more rigorous evaluation before they can be considered effective strategies. The strategies that are most effective are those designed to identify young people and their parents at risk and offer or refer them to appropriate educational or counseling programs.

Early intervention strategies are more likely to be effective if they:

- **Are targeted to families considered at risk for or who are already using alcohol, tobacco, and other drugs.** It is important to obtain accurate numbers of young people and families who qualify as high risk to justify these kinds of intervention services. Communities that do not have large numbers of young people (and families) at high risk for substance abuse should consider placing their resources elsewhere.
- **Include skill-building components for both parents and children.** Parents are usually trained in behavioral skills to reduce conduct problems in children; improve parent-child relations, including positive reinforcement, listening and communication skills, and problem solving; provide consistent discipline and rulemaking; and monitor children's activities during adolescence. Programs that emphasize these skills and that target families

at high risk have been shown to be effective in enhancing protective factors and producing positive substance-abuse-related outcomes. Further, interventions—involving family therapy or family counseling to improve communication and foster attachment in families of delinquent youth—with substance abusing parents have been shown to improve parenting skills, reduce parents drug use, and improve child behavior.

- **Identify and expand upon the strengths of families.** While helping families build the skills they need to improve parenting and strengthen bonds with their children, early interventions for families at risk should also build on the assets that families and parents already possess, rather than repeatedly focusing on what they lack.
- **Offer incentives for participation.** It is often difficult to recruit parents and young people into prevention programs. Provide incentives for participation that include transportation to and from training sessions and childcare or activities for children who must accompany parents to the training sessions. Schedule the program at times that are most appropriate for parents. For some parents, this may be during working hours, and for others, it may be after dinner.
- **Are culturally appropriate.** For example, interventions that acknowledge or address issues involved in family acculturation have produced positive effects. Some of these issues include the presence and importance of the extended family, the influence of immigration or circular migration, varying language abilities within families, the influence of religion and folk healers, the influence of voluntary and social organizations, and the stresses families experience as a result of poverty or racism.
- **Address the relationship between substance abuse and other adolescent health issues.** These issues include mental and emotional health, family conflict, unwanted or unintended pregnancy, sexually transmitted diseases, school failure, and delinquency.

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